

Hemlock Lake

Page 1: AIS Monitoring and Water
Clarity Report of June 21st, 2017



Land & Water Conservation Department

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Hemlock Lake AIS Monitoring and Water Clarity Report

Field Date: June 21st, 2017
WBIC: 989200
Previous AIS Findings: None
New AIS Findings: None
Field Crew: Aubrey Nycz, AIS Project Leader, and Thomas Boisvert, AIS Project Assistant, Oneida County Land and Water Conservation Department
Report By: Thomas Boisvert

On June 21, 2017, Aubrey and I went to Hemlock Lake to implement AIS monitoring along with water clarity and quality assessments. Hemlock Lake is a small 38 acre oligotrophic lake located in Oneida County, and has one public boat launch. Also, the entire shoreline of Hemlock Lake is a part of the American Legion State Forest, and is widely open to the public. The lake has a maximum depth of 25ft, and the substrate is reported to be 10% sand, 0% gravel, 0% rock, and 90% muck. Along with reporting the depth and substrate, the Wisconsin Department of Natural Resources also reports that the lake has largemouth bass, walleye, and panfish present. We observed this firsthand as bluegill, crappie, perch, and largemouth bass were seen in large quantities along the shoreline.

The weather while conducting research on Hemlock Lake was very well. The outside temperature was 70 degrees Fahrenheit, the sky was partly cloudy, little to no wind, and the water clarity was very good. There was no adverse weather to impede our measurements in any way.

When conducting our AIS lake survey, Aubrey and I did a complete shoreline scan while meandering in and out between different depths. We looked on the shoreline itself and also in the water, noting the plants and animals we had observed in the process. When possible we got in the water and used the aquascopes to have a closer look at the bottom composition. A weed rake was also used at a random location to have a closer look at the bottom vegetation.

To observe the water clarity and quality of Hemlock Lake, Aubrey and I went to the deep hole towards the middle of the lake. After locating the deep hole with our sonar unit, we used a Secchi disk to measure clarity and a dissolved oxygen meter to measure water health. Oxygen is needed for a healthy fish population, and also for plants to respire at night as well. The measurements from the dissolved oxygen meter can tell us if the organisms in the lake would be under stress, and thankfully both of these measurements were relatively average in nature, and there should be no concern for the health of Hemlock Lake. The Secchi disk reading was 16 feet, and the dissolved oxygen readings can be found in table 2. Graphs displaying water quality can also be viewed below (graphs 1-3).

Aubrey and I did not find any invasive species on Hemlock Lake. We were glad to see that no invasive species are present at this time. The lake seems to be healthy, and many native plants were present and thriving. The 4 most common native plants we observed were Pickerel Weed, Blue Flag Iris, Bullhead Pond Lily, and Large Purple Bladderwort. These plants can be seen below in table 1.

Findings: Taken 11 a.m. – 1 p.m. June 21, 2017

Aquatic Invasive Species: We did not find any new invasive species along the perimeter of Hemlock Lake.




Secchi: The Secchi reading on this lake was 16 feet out of a 25 foot maximum depth. The water color was a bluish color, and appeared clear when glancing across the lake.

Dissolved Oxygen: These measurements can be seen in Table 2.

Figure 1. Map of Oneida County, WI with Hemlock Lake circled in red (approximate location)



Figure 2. Map of Hemlock Lake with boat landing and location of Secchi disk reading labeled.

-  Public boat landing
-  Deep hole & location of Secchi disk reading
- Secchi Disk Readings:
Hemlock Lake - Deep Hole
Coordinates - Not Available
-  Rake Location

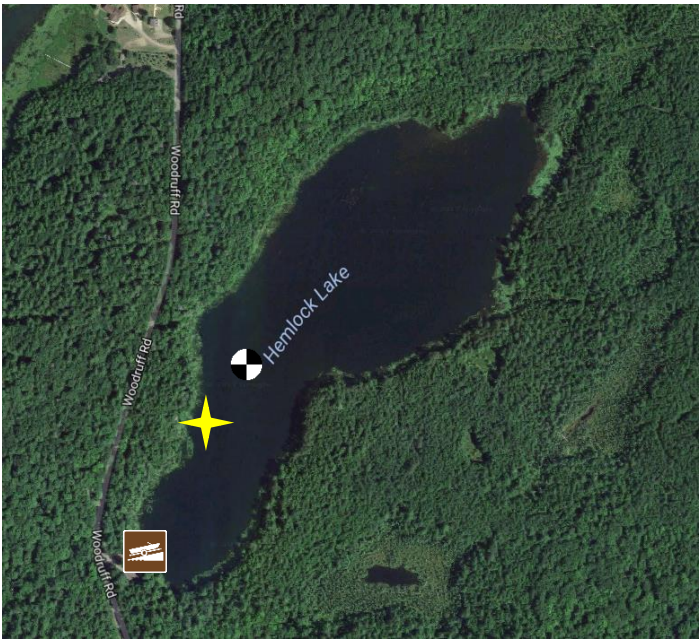


Table 1. Plants found in Hemlock Lake when monitoring.



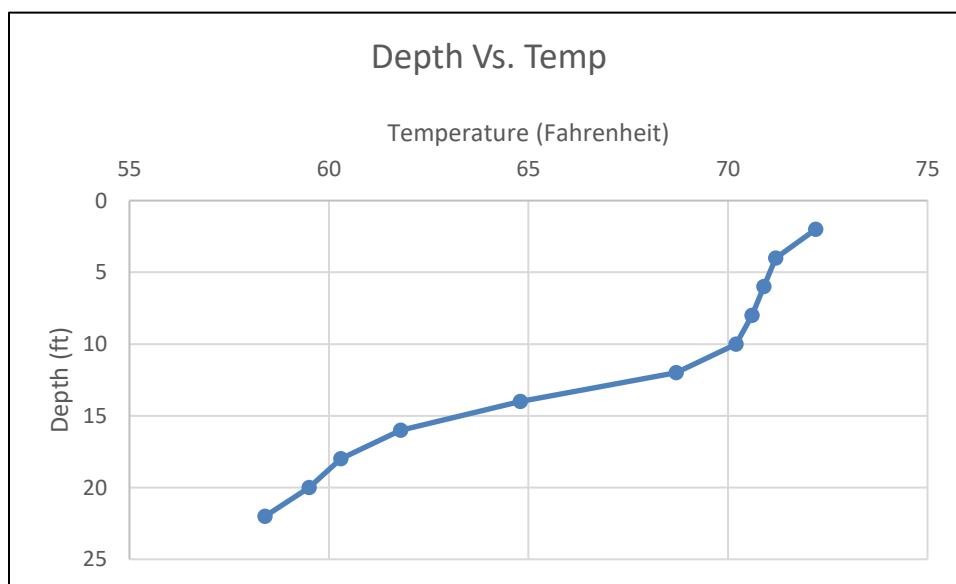
Scientific Plant Name	Common Plant Name	Image
<i>Pontederia cordata</i>	Pickerel Weed	
<i>Iris versicolor</i>	Blue Flag Iris	
<i>Nuphar variegata</i>	Bullhead Pond Lily (Spatterdock)	
<i>Utricularia purpurea</i>	Large Purple Bladderwort	

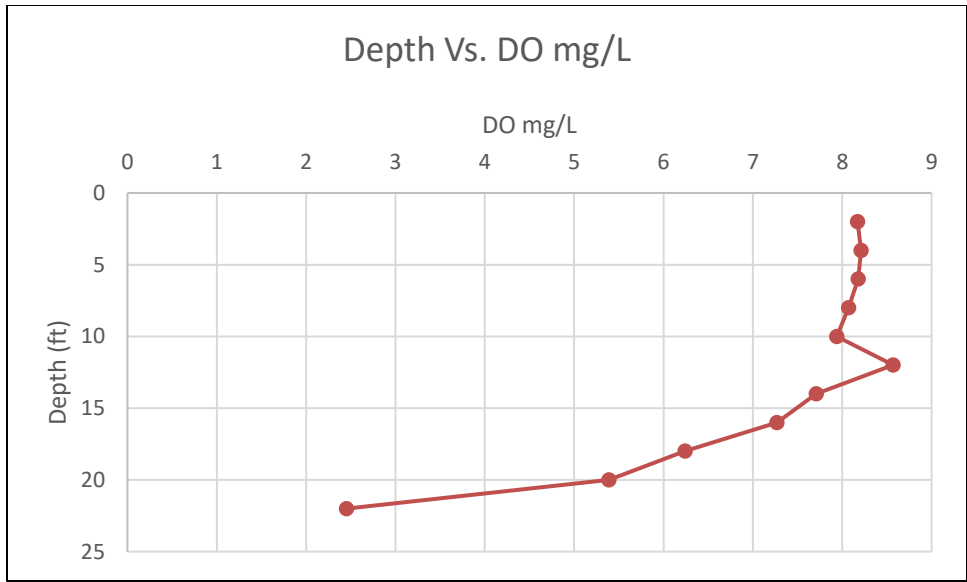
Table 2. Dissolved oxygen levels and temperatures at the deep hole.

Depth (Feet)	Dissolved Oxygen Levels (mg/L)	Temperature (F)	Percent Dissolved Oxygen
2	8.17	72.2	99.6%
4	8.21	71.2	99.0%
6	8.18	70.9	98.3%
8	8.07	70.6	96.7%
10	7.94	70.2	94.7%
12	8.57	68.7	100.7%
14	7.71	64.8	86.6%
16	7.27	61.8	78.9%
18	6.24	60.3	66.5%
20	5.39	59.5	56.9%
22	2.45	58.4	25.5%

Graph 1



Graph 2



Graph 3

